

In the Claims

The following Listing of Claims replaces all prior versions in the application:

LISTING OF CLAIMS

1. (Canceled)
2. (Currently amended) Device according to claim 14, furthermore comprising:
 - means for measuring each of the different currents entering and leaving the said cabinet,
 - first calculating means for at least one harmonic of each of the said currents.
3. (Original) Device according to claim 2, wherein the calculating means determine the difference between the current coming from a generator and entering the cabinet and the sum of the currents leaving this cabinet corresponding to the loads supplied by this generator, for at least one harmonic of these currents.
4. (Original) Device according to claim 2, wherein the second calculating means determine the difference between the set of currents entering the cabinet (10) and the set of currents leaving the cabinet (10), for at least one harmonic of these currents.
5. (Original) Device according to claim 2, wherein the measurement of the value of the currents as well as the different calculations are performed cyclically, with a given sampling frequency.
6. (Original) Device according to claim 5, wherein the sampling frequency is greater by a factor of 10 than the frequency of the fundamental of the current supplied by a generator.

7. (Original) Device according to claim 5, wherein the control of the switching means is only tripped if a short circuit condition is verified during a number of sampling periods greater than a threshold.
8. (Original) Device according to claim 2, wherein the current measurements are performed on each of the phases.
9. (Original) Device according to claim 2, wherein the switching means comprise at least one contactor.
10. (Original) Device according to claim 2, wherein the calculating means perform a calculation on the fundamental harmonic of each of the currents.
11. (Original) Device according to claim 2, wherein the calculating means perform a calculation on the sum of the fundamental harmonic and of several lowest-order harmonics of each of the currents.
12. (Original) Device according to claim 2, wherein the first calculating means perform a calculation on one or more harmonics of selected order chosen from among the lowest orders of each of the currents.
13. (Canceled)
14. (Previously presented) Device for protection against overcurrents in an electrical energy distribution cabinet, which receives electrical energy supplied by at least one generator and which distributes this energy to at least two loads, said device comprising:
 - switching means,
 - means for calculating the absolute value of the difference between at least one current entering said cabinet and the sum of currents leaving said cabinet corresponding to loads supplied by said generator, for at least one harmonic of these currents,

- comparison means which control the opening of the switching means if this absolute value is greater than a predetermined threshold

- acquisition modules wherein the current is measured, and at least one digital communication bus (B) for the transmission of information between these modules (M) and the calculating means, wherein each digital communication bus is a CAN bus.

15. (Currently amended) Device according to claim ~~13~~14, wherein the acquisition modules are situated near the electrical connections.

16. (Previously presented) Device for protection against overcurrents in an electrical energy distribution cabinet, which receives electrical energy supplied by at least one generator and which distributes this energy to at least two loads, said device comprising:

- switching means,

- means for calculating the absolute value of the difference between at least one current entering said cabinet and the sum of currents leaving said cabinet corresponding to loads supplied by said generator, for at least one harmonic of these currents,

- comparison means which control the opening of the switching means if this absolute value is greater than a predetermined threshold

- acquisition modules wherein the current is measured, and at least one digital communication bus (B) for the transmission of information between these modules (M) and the calculating means, wherein an acquisition module (M) comprises in succession a low-pass filter, a sample-and-hold circuit, a quantising module, and a discrete Fourier transform module.

17. (Previously presented) Device for protection against overcurrents in an electrical energy distribution cabinet, which receives electrical energy supplied by at least one generator and which distributes this energy to at least two loads, said device comprising:

- switching means,

- means for calculating the absolute value of the difference between at least one current entering said cabinet and the sum of currents leaving said cabinet corresponding to loads supplied by said generator, for at least one harmonic of these currents,

- comparison means which control the opening of the switching means if this absolute value is greater than a predetermined threshold

- acquisition modules wherein the current is measured, and at least one digital communication bus (B) for the transmission of information between these modules (M) and the calculating means, wherein in the calculating means, the absolute value of the difference between the entering current(s) and the leaving current(s) is temporally filtered.

18. (Currently amended) Use of the device according to claim ~~1~~14 in the "electrical core" of an aircraft.

19-23. (Canceled)